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ABSTRACT

Defining "attitudes" as a structure or organization of beliefs, this paper advances a formal theory of the relationship between attitudes, other belief configurations, and overt behavior. The theory presented assumes that an attitude about a given topic consists of three major dimensions of belief orientation (favorability/unfavorability), salience (strength of feeling), and specificity (the restrictive as opposed to the inclusive aspects of beliefs). It also incorporates beliefs about topic importance, social pressure to act or not to act, social influence to act positively or negatively, and action constraints related to the behavior under study. Each of these factors is defined and incorporated into the axiomatic formulation. Two major theorems are derived that predict (1) whether the subject will act or not act toward the attitude topic and, if the subject acts, (2) whether that action will be positive or negative. Finally, extensions of the theory are discussed, indicating how persuasive messages can be designed to modify belief configurations and influence behavior. (Author/FL)

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COMMUNICATION, ATTITUDES AND BEHAVIOR: AN AXIOMATIC THEORY WITH IMPLICATIONS FOR PERSUASION RESEARCH

by

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ABSTRACT

Communication scholars have for decades studied the effects of message-related variables on attitude formation and change. Implicit in most persuasion investigations has been the assertion that any resulting influences on attitudes produce correlated effects on behavior. Research findings, however, have not typically supported the assumed attitude/behavior relationship. The present paper defines attitudes as a structure or organization of beliefs. It advances a formal theory of the relationship between attitudes, other belief configurations, and overt behavior. The theory was developed after a comprehensive review of prior theories and research. The new theory assumes that an attitude about a given topic consists of three major dimensions of belief orientation (favorability-unfavorability), salience (strength of feeling), and specificity (the restrictive vs. inclusive aspects of beliefs). The theory also incorporates beliefs about topic importance, social pressure to act or not act, social influence to act positively or negatively, and action constraints related to the behavior under study. Each of these factors is given careful definition and is incorporated into the axiomatic formulation. Two major theorems are derived. These theorems predict (1) whether the subject will act or not act toward the atttitude topic, and, if the subject acts, (2) whether that action will be positive or negative. Finally, extensions of the theory are discussed, indicating how persuasive messages can be designed to modify belief configurations and influence behavior.

COMMUNICATION, ATTITUDES AND BEHAVIOR: AN AXIOMATIC THEORY WITH IMPLICATIONS FOR PERSUASION RESEARCH

The relationship between attitudes and behavior is of profound significance for both researchers and practitioners in the area of human communication. It has long been the hope of communication specialists that in this relationship would be found the key to achieving desired changes in people's behavior through persuasion. This vision has certainly tantalized the communication research world for decades. Untold numbers of studies have tried to identify ways in which we can persuade people to view some perceptual object differently--and thereby cause them to act toward that object in modified ways. If only the right combination of words, message structure, type of communicator, or mode of presentation can be found (so the vision goes) then people's subjective orientations can be reshaped and their patterns of overt behavior can be influenced.

Communication researchers have spent so much time in the search for techniques to achieve attitudinal change because of the high interest in the topic in the world of practical affairs. The list of people who want to influence the behavior of others is a long one. It includes politicians, preachers, professors, prison rehabilitators, psychotherapists, lawyers, and, of course, advertisers--to mention only a few. Even for the ordinary citizen, attitude/behavior relationships can be critical. For example, attitudes can (in theory) shape the way people behave toward the handicapped, the obese, the mentally ill, the ex-mentally ill, the

aged, epileptics, and the mentally retarded. For many such categories of people the attitudes prevailing among the public have consequences in terms of the denial of employment, credit, equality of housing, equal educational experience, and personal acceptability. Thus, the relationship between attitudes and behavior is an issue that lies at the heart of behavior theory, social organization, social change through persuasion, and the democratic process.

But the relationship between attitudes and behavior is one of the scientific phantoms of the western world. It is like the great rabbit "Harvey" in Mary Chase's well-known play. Some people see it but others don't! In other words, after decades of research by specialists in several fields of social and behavioral science, we remain essentially uncertain about how one changes attitudes through persuasive communication and about attitudinal influences on behavior.

In recent years there has been a renewed research effort of impressive proportions aimed at understanding the way in which attitudes are related to overt behavior. Hundreds of studies have looked at this relationship from almost every conceivable perspective. In fact, so much has been done that the situation has become confusing. There are now so many different conceptualizations of attitudes, so many proposals as to how they might be related to behavior, and so many ideas about other situational variables that might influence the relationship, that the entire research area is approaching a state of chaos. Clearly, the time has now come to take stock and try to bring these diverse ideas together. A theory is needed that is drawn from a base of established research findings and that integrates compatible ideas developed from different

approaches in various disciplines. As will be shown, it is the purpose of the present paper to achieve this objective.

Specifically, the three purposes of the present paper are: (1) to summarize the most significant research findings to date and to review alternate formulations now existing in the study of attitude/behavior relationships, (2) to advance a formal (axiomatic) theory of that relationship that draws largely from the existing knowledge base, and (3) to show how that theory can provide guides for further research on ways in which persuasive messages might be used to bring about changes in overt behavior by modifying attitudes and other configurations of beliefs.

THE ACCUMULATION OF KNOWLEDGE

The nature of the relationship between verbal attitudes and overt behavior has been of concern to social scientists since the concept "attitude" first came into use (Thomas and Znaniecki, 1918). However, the first empirical attempt to study the attitude/behavior relationship was conducted by LaPiere (1934). He traveled for several months with a Chinese couple and recorded their ability to gain admittance into restaurants and hotels. Subsequently, he sent inquiries to the same establishments asking whether members of the Chinese race would be accepted as guests. Despite the fact that the trio was refused service only once in 250 instances stretching across 10,000 miles of travel, 92 percent of the establishments contacted indicated that they would not serve Chinese patrons. Eighteen years later, Kutner, Wilkins, and Yarrow (1952) conducted a similar study. Three women (two white and

one black) visited eleven urban restaurants. Their measure of behavior was service in the restaurant, and they measured attitude by telephone interviews. Results paralleled those of LaPiere.

The results of these two field studies raised questions concerning the basic assumptions about the attitude/behavior relationship. That is, traditionally a one-to-one correlation had been assumed between one's attitude about a given object and overt behavior toward that object. However, the findings of LaPiere and Kutner et al. raised the possibility that earlier assumptions were not correct. Some investigation (Dobb, 1947; Blumer, 1955) even went so far as to question the usefulness of the attitude concept.

Rather than abandoning the attitude concept or the assumption that attitudes determine behavior, other researchers proceeded to hypothesize new conceptualizations to account for the findings. Minard (1952), observing the discriminatory behavior of white coal miners, found that although 80 percent of the white miners were friendly toward blacks down in the mine, only 20 percent were friendly in town after working hours. He interpreted this as meaning that role expectations in the community significantly altered attitude/behavior relationships. Lohman and Reitzes (1954) reported similar situational differences. They studied white residents who belonged to a Property Owners' Association that was actively resisting black penetration. Members of this association also belonged to a labor union that had a well-implemented policy of granting job equality. The inconsistency was explained in terms of role requirements in each of the groups.

Although the early investigators all noted the potential importance of situational factors in the attitude/behavior relationship, De Fleur and Westie (1958) first theorized regarding the importance of a complex of roles, norms, and reference groups to decisions concerning behavior. These investigators asked subjects, identified as high or low in prejudice toward blacks, about their willingness to pose for a photograph with a black person of the opposite sex. Subjects were then shown seven photograph release agreements representing situational variations in terms of the amount of public exposure the photo would receive. A low but significant relationship between attitudes and the level of public exposure agreed to was obtained. Subsequently, De Fleur and Westie asked their subjects if there was any particular person or group who came to mind when they decided to sign (or not) and whether there were any people who the subjects felt would approve or disapprove of their signing the agreements. Based on responses to these questions, the researchers concluded that subjects make "significant use of their beliefs concerning possible approval or disapproval of reference groups as guides for behavior" (672).

Linn (1965) also used the De Fleur/Westie photograph release technique and conducted a postexperimental interview with his subjects regarding social influence. His interviews suggested that other variables may also have to be considered: amount of anticipated interaction with the attitude object; the degree of visibility of this interaction; the people who may view it; and the consequences (positive or negative) that might arise.

The importance of a variety of social influence factors as mediating variables on the attitude/behavior relationship has since evolved into what De Fleur labels a "contingent consistency" approach. Within this perspective, attitude occupies a central or pivotal position and the relationship to behavior is mitigated by social situation variables, e.g., perceived group norms, visibility of behavior, etc. With these ideas in mind, Acock and De Fleur (1972) formulated and tested a Configurational Theory of attitude/behavior relationships. Subjects completed a questionnaire which included questions related to legalizing marijuana. In addition to measuring the subjects' own attitudes, their beliefs about the attitudes of both their peers and family were assessed. Subsequently, the subjects were asked to vote on the legalization question. The independent effects of the three variables (own attitude, perception of peer attitude, and perception of family attitude) accounted for variance in behavior to a very high degree when the configuration of all three factors was consistent.

Albrecht and Carpenter (1976) have observed that the primary problem with a configurational model is that of deciding which social constraint variables are most crucial and require inclusion. Acock and De Fleur's findings, however, would suggest that a combination of perceived norms of family and peers may be sufficient for behavior prediction. Nevertheless, the majority of recent research on the attitude/behavior relationship has been defined and carried out with the purpose of identifying independent and combined effects of a wide variety of social influence variables.

In a somewhat different approach Fishbein (1967; 1972; 1973 and 1975) has formulated a framework composed of three basic variables that are said to be antecedent to behavioral intentions (rather than behavior itself). The variables are: (1) attitude toward performing the act or behavior in question; (2) normative beliefs about the act; and (3) motivation to comply with those beliefs. The first variable is often referred to as the "attitudinal" factor and the second and third variables combined are labeled the "normative" factor. The theory asserts that specific behaviors can be predicted from specific behavioral intentions, which, in turn, are a function of the attitudinal and normative factors.

Fishbein notes that while additional factors may contribute to prediction of behavioral intentions, they may do so only insofar as they influence one of the specific factors in the basic model. The theory requires that attitude be assessed in terms of performing a specific act under specific circumstances rather than in terms of a general attitude toward objects or behavior. For example, Fishbein would require that attitude toward going to church next Sunday morning at 11:00 be assessed rather than attitude toward churches or attitude toward church attendance. Thus, the distinctive characteristics of the Fishbein Behavior Intentions Theory are (1) its concentration on predicting behavioral intentions rather than overt behavior and (2) its requirement for specificity.

In terms of supportive data, tests of Fishbein's theory have resulted in high multiple correlations. Ajzen and Fishbein (1971) report that the average multiple correlation in ten different studies

is about .81. However, these findings cannot be directly compared to traditional attitude/behavior studies because they do not concern themselves with overt behavior as such but only with the intention to act.

The third of the theories advanced to date which attempts to explain attitude/behavior relationships is Rokeach's Object/Situation Theory (1966-67; 1972b). Rokeach proposed that behavior with respect to an object within a situation is always a function of at least two interacting attitudes: attitude toward the object and attitude toward the situation. These are weighted by the perceived importance of the two attitude factors relative to one another. In order to test this theory, Rokeach and Kliejunas (1972a) assessed the frequency of cutting class in specified psychology courses in relation to students' attitudes toward the professor and their attitudes toward the situation, i.e., the general activity of going to class. Results indicated that each attitude independent of the other predicted behavior minimally. A more accurate prediction was obtained if both attitudes were taken into consideration. Finally, the most accurate prediction occurred when the two were taken together weighted for perceived importance as predicted by the theory. Interestingly, attitude toward the situation was consistently and significantly more favorable than attitude toward the professor in all comparisons. Thus far, the object/situation theory is the least empirically tested framework of the three major attitude/behavior explanations.

During the sixties and seventies, research on the attitude/behavior relationship has flourished. An examination of the last ten years of this literature revealed over 500 journal articles, reviews

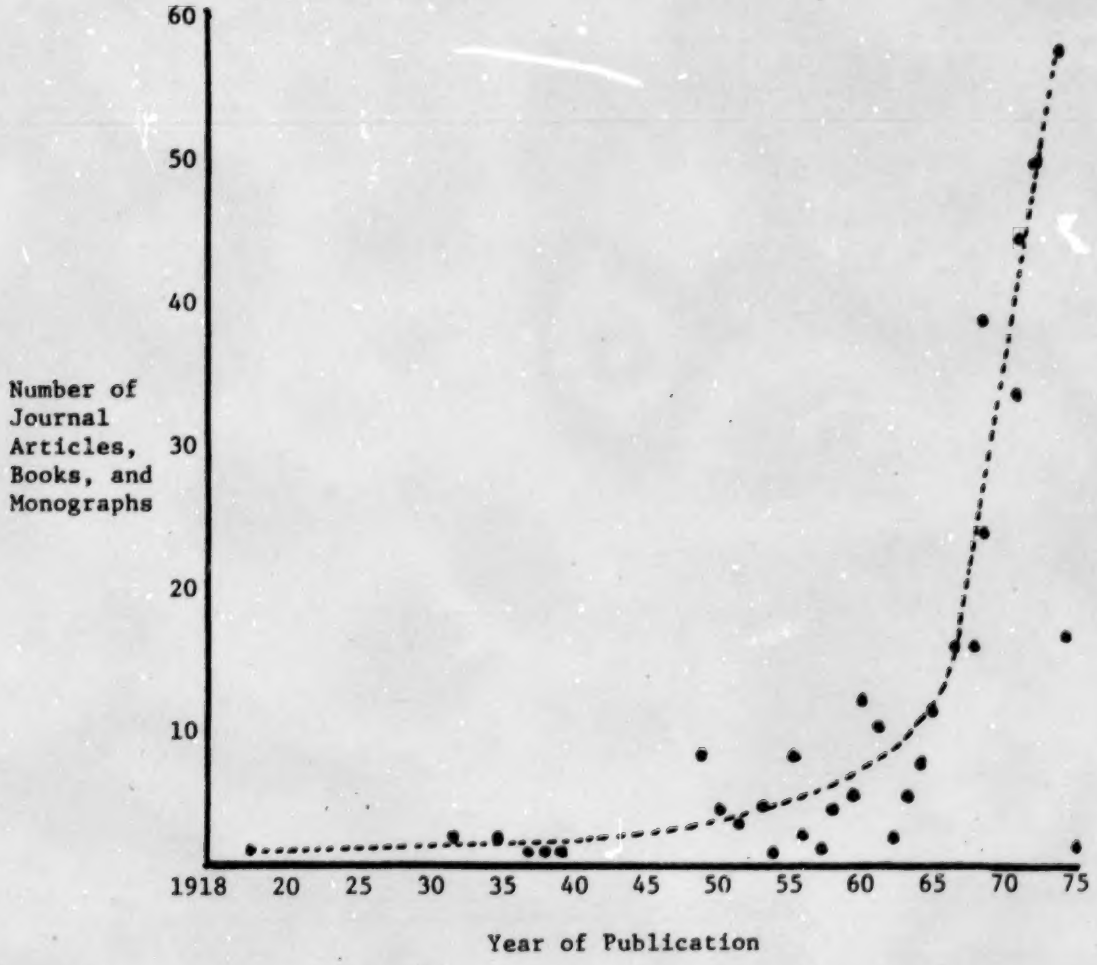
of articles, dissertations, monographs and books devoted to various aspects of the issue.

The bulk of the empirical literature can be divided into (1) field studies in which comparisons are made of sub-cultural groups, (2) tests of Fishbein's model, (3) tests of hypotheses derived from De Fleur's theory, and (4) traditional LaPiere-type attitude/behavior investigations. This literature also includes a smaller group of entries which specifically examine the role of behavior change resulting from attitude change. Figure I shows a pattern of accelerating interest in the issue from 1925 to 1973. The drop in the number of publications after 1973 may reflect delays in indexing and abstracting. The most substantive of the recent reviews of this literature include Calder and Rosa (1973), Kelman (1974), Liska (1974), Schuman and Johnson (1976), and Ajzen and Fishbein (1977).

Because the relationship between attitudes and behavior continues to be recognized as basic to the social sciences, it is frustrating to realize that from the numerous publications available no satisfactory theory has yet been advanced to predict the way a given set of individuals will behave toward a given topic from assessments of their attitudes toward that topic. Prior attempts to formulate theories have many shortcomings. They focus on a narrow range of topics. They tend to deal with the problem on an individual-to-individual basis. That is, while previous investigators have studied collectivities, their formalized theories are applicable to individuals rather than aggregates. Finally, empirical tests of these theoretical formulations have yielded mixed results. In some research, attitudes appear to predict action, but in

Figure 1

NUMBER OF ARTICLES, BOOKS, AND MONOGRAPHS FOCUSING ON ATTITUDE - BEHAVIOR RELATIONSHIPS, 1918 - 1975*



*Years beyond 1973 may not be reliable due to delays in publication of abstracts and indexing.

many other studies only limited consistency has been found. In the following sections, a theory is advanced that focuses on attitude/behavior relationships on an aggregate or collective level. That is, the theory makes predictions about consistency or inconsistency on an average or central tendency basis.

While contemporary theories of attitude/behavior consistency have left much to be desired, they are not totally without merit. Taken together such theories have explored a great many factors, each of which may play some part in shaping the relationship between attitudes and behavior. Thus, while a great deal has been learned over the last two decades about attitude-related influences on behavior, none of the existing theories about such influences has been shown to have convincing empirical support. In fact, each of the existing theories of attitude/behavior relationships suffers from Samuel Johnson's oft-quoted condition in which "another beautiful theory has been murdered by a gang of ugly facts." Thus, a theoretical integration of the factors that play a part in relating attitudes to behavior is sorely needed.

The present paper advances a structural theory of attitude/behavior relationships. The term "structural" in this context means that each component of the theory can be defined as a specific structure or organization of beliefs. This refers not only to the configuration of actors' attitudinal beliefs but to their beliefs about the topic, the social situation, and the nature of the action. The purpose of the theory is to predict certain types of overt actions toward relevant topics from a knowledge of peoples' attitudes and their beliefs about constraints or facilitating factors that may operate in the situation of

action. The theory is different from previous formulations because of the treatment given to its major components. That is, the characteristics of attitudes, and beliefs about topics, facilitators, constraints, and actions are described in detail. Because of the detailed attention given to these components, this theory is more precisely formulated than prior conceptualizations of attitude/behavior relationships and takes into account a larger number of variables. It can also deal with an extended range of topics. By being more inclusive, the present theory integrates into a single formulation many of those variables and relationships that have been incorporated into such diverse formulations as De Fleur's Configurational Theory, Fishbein's Behavioral Intentional Theory, and Rokeach's Object/Situation Theory.

In the sections that follow, the structures and characteristics of each of the components of the theory are explained in detail. After explication of each construct, and brief explanations of procedures for measurement, the theory is set forth in formal terms and tentative theorems are suggested for research study. Finally, the implications of the theory for Communication/Persuasion are discussed.

THE STRUCTURE OF ATTITUDES

Attitudes have been defined in a variety of ways. The most common definitions include: (1) probability conceptions, (2) latent-process conceptions (De Fleur and Westie, 1963), and (3) belief conceptions (Rokeach, 1970). The present theory is based on an extended belief conception of attitudes. The belief conception is illustrated by Rokeach's definition:

> An Attitude is a relatively enduring organization of beliefs around an object or situation predisposing one to respond to some preferential manner. (112)

The present formulation builds on Rokeach's definition and advances a conceptualization and definition of attitude as a structure of beliefs with unique properties that are essential to the overall theory.

The dimensions of attitudes. By way of background, attitudes are often conceived as having three components (Rokeach, 1970). These include a cognitive component (belief), an affective component (strength of feeling), and a behavioral component. Thus, a predisposition to action is thought of as part of the attitude. The present definition incorporates modified versions of the first two components. However, it repositions the behavioral component from its theoretical location as part of the attitude (antecedent to behavior) to a very different position as an action consequence. This reconceptualization defines the behavioral consequence as overt actions rather than behavioral predispositions. One of the important functions of attitude when approached in this way is that (in conjunction with other relevant variables) it can predict the proportion of individuals in a given set who will act in a specific way toward an attitude topic.

1. Orientation. The present theory assumes that the belief organization of attitudes has three major dimensions: orientation, salience, and specificity. "Orientation" refers to specific properties of a given individual's beliefs about a topic. That is, "orientation" refers to only a part of the totality of the beliefs that a person holds

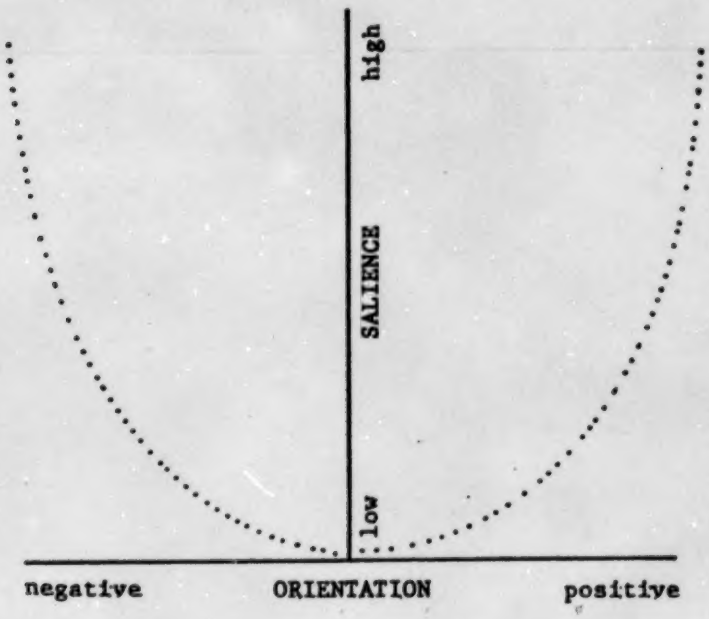
regarding the attitude topic.. The beliefs that make up the orientation dimension include all those that have implications of favorability or unfavorability. Such implications are made manifest in verbal expressions that include indications of acceptance-rejection, like-dislike, or approval-disapproval. Thus, orientation can be depicted on a continuum with a zero piont (neutral position) in the center and with increasingly negative values on one side and increasingly positive values on the other. Excluded from this dimension are beliefs that are of a factual nature that have few implications concerning acceptance or rejection of the topic.

2. Salience. The term "salience" refers to the actor's beliefs about strength of feeling. That is, salience is the degree to which the individual feels that the topic is important to him or her as a person. Salience differs from orientation in that individuals may believe themselves to be favorable or unfavorable toward the topic, but they may or may not have intense feeling about their position. We will assume that salience is orthogonal to orientation and can be represented on a continuum that goes from low values to high values. A plot of orientation and salience would resemble that of Figure 2. It is possible that this relationship may be non-linear. For example, Suchman (1950) noted a U-shaped relationship between variables of this type. This is suggested by the dotted line in Figure 2.

3. Specificity. The "specificity" dimension of beliefs is often discussed in the literature as an important aspect of attitudes but it has seldom been explicated. In the present formulation, it refers to the degree to which given attitudinal beliefs are restrictive vs.

Figure 2

ORIENTATION AXIS AND SALIENCE AXIS



inclusive. Beliefs can be arranged along a restrictive-inclusive continuum if they express the following attributes to any degree:

(1) Universality--The degree to which a belief refers to an individual case (restrictive) vs. referring to the possible universe of such cases (inclusive).

(2) Identification--The degree to which a belief refers to an aspect of self (restrictive) vs. referring to a collectivity or social aggregate (inclusive).

(3) Immediacy--The degree to which a belief refers to present time only (restrictive) vs. referring to a future time (inclusive).

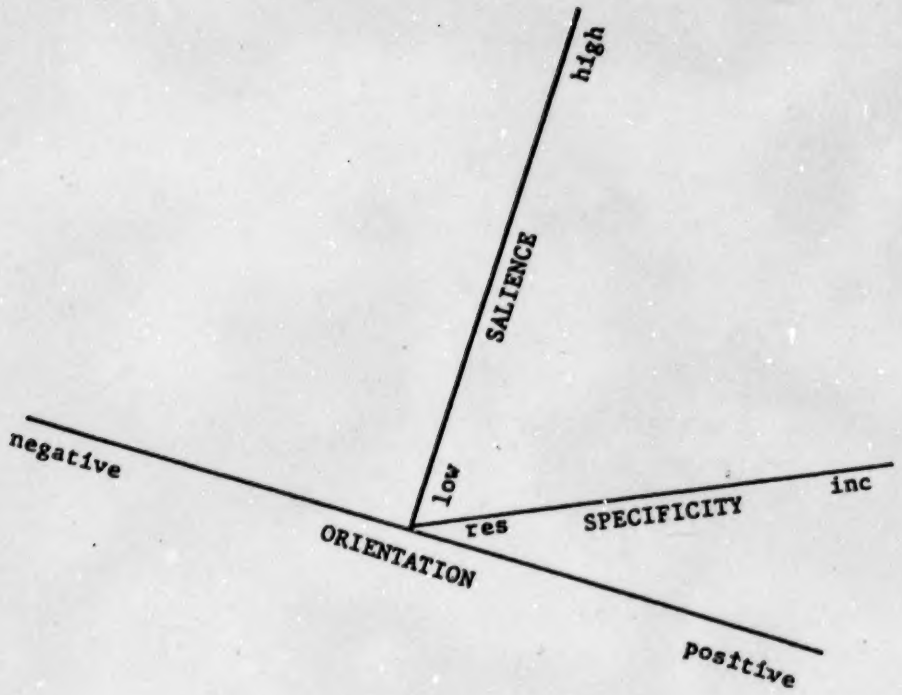
(4) Abstractivity--The degree to which a belief refers to a concrete element or property (restrictive) vs. referring to an abstract principle or generalization (inclusive).

The specificity dimension is assumed to be orthogonal to both orientation and salience. If added to Figure 2 it would rise vertically from the page at the point where the other two axes meet, thus forming a three-dimensional space. Figure 3 shows this in perspective. Obviously, the position of a given individual in this three-dimensional space will depend upon his or her favorable vs. unfavorable position on the orientation continuum, upon degree of salience, and upon the average level of specificity of the orientation beliefs. In a given sample, individuals negative in orientation would form a cluster on the left side of Figure 3 and individuals positive in orientation would form a cluster on the right side.

Combining the dimensions. As is clear from the previous sections, the attitude of a given individual is defined as his or her tri-dimensional

Figure 3

ORIENTATION, SALIENCE, AND SPECIFICITY AS ORTHOGONAL AXES



position on the three axes. Therefore, "attitude" defines the degree of simultaneous influence on the actor of the three dimensions. The present formulation makes clear both the nature of attitude as a theoretical construct and its potential role as an influence on behavior. That is, the more positive (or negative) the orientation, the higher the salience, and the greater the specificity, the stronger the attitude of the actor and the more likely the actions will correspond, other factors equal (ceteris parabus). Attitude, therefore, is an integrating construct. That is, the three orthogonal dimensions are joint influences on behavior, along with other belief organizations to be discussed in later sections.

Each of the three dimensions of attitude easily lends itself to measurement. No complex new techniques need to be introduced. In quantitative terms, attitude is the weighted normalized average of the numerical scores on each of the three dimensions. As noted above, the attitude of a given individual defined in this way can be plotted as a point in three-dimensional space. The more removed that point is from the intersection of the three axes, the stronger that person's attitude. Attitude will be a maximum when the location of the point is not only at the extremes of the three dimensions but equidistant from each.

Orientation lends itself well to the Thurstone equal-appearing intervals procedure. Salience requires a scaling procedure that assigns numerical values to strength of feeling items--such as strongly agree, agree, etc. The Likert technique could thus be used after first selecting orientation items with the Thurstone procedure. Finally,

specificity of a given set of belief statements can be quantified with a paired-comparisons procedure.

Thus, the preparation of a measurement instrument requires that statements of belief be assembled to represent all intervals along the orientation dimension. It also requires that categories be provided for each item for expression of strength of feeling. Finally, each of the statements of belief must be judged with respect to what we have termed restrictive vs. inclusive attributes. Such an instrument would provide quantitative data on each of the three dimensions for each item endorsed. The respondent's attitude score would be the normalized average of the three separate measures.

This approach does not depend upon traditional multi-dimensional scaling procedures (Nunnally, 1967). In that approach one begins with the belief statements that we have referred to as the orientation dimension. Respondent's positions on such beliefs are intercorrelated and factor analyzed to yield a limited number of cognitive categories of underlying meaning. With suitable rotational procedures, the relationship between categories can be studied. While such refinements may eventually prove practical, they would add little to the present formulation at this stage of theoretical development. To minimize any potential effects of such cognitive "multi-dimensionality" the procedures advocated for the present instrument construction would include careful sampling of as many kinds of orientation beliefs as possible.

THE STRUCTURE OF BELIEFS ABOUT TOPIC IMPORTANCE

Prior attitude/behavior research has focused on topics that appear to have been selected in a random way. These have ranged from such picayune matters as "cutting class" and "participating in classroom experiments" to more profound issues such as "atomic warfare," "environmental conservation" and "energy supplies." Studying both trivial and far-reaching topics serendipitously selected has contributed to difficulties in theoretical development and is partly responsible for the mixed bag of findings that characterizes attitude/behavior research. A more rational basis for selecting attitude topics is needed in order to develop a theory with defined boundaries. The present theory has been designed to focus on topics that are in most instances consequences of change. Such attitudinal issues emerge out of the constant pressure in society to improve the social structure. Thus, new programs, movements, legislation, and sociocultural modifications are constantly proposed and/or achieved. These changes generate controversy when some segments of society favor or disfavor the new arrangements. Many of these issues continue over time to become lasting attitudinal topics.

Viewed from the perspective of the actor, topics that are seen as "important" have at least four major characteristics. That is, they are perceived by actors to be:

(1) relevant to their group;

(2) durable over time;

(3) controversial in society;

(4) socially significant to others.

By "relevant" we refer to topics that concern a particular population under study. These may be matters that touch only people in specific locales, such as Brooklyn, Arkansas, or Texas. Or, they may be of nationwide interest. Some topics will concern only one part of the public, such as farmers, members of labor unions, or feminists. Thus, changes affecting such matters as agricultural price supports, the role of federal mediation in labor disputes, and affirmative action procedures are relevant to only a limited number of people. By contrast, topics of broader scope would be illustrated by increases or decreases in the federal income tax, tightening or relaxing of pollution controls on automobiles, and the imposition of price and wage controls.

We mean by "durable" that they are issues that remain on the agenda of the population under study as matters of concern over substantial periods, such as years or even decades. Examples would be the legalization of marijuana, the increasing use of nuclear power plants, and desegregation of the schools, and the tightening of gun controls.

Issues that are "controversial" are those for which substantial segments of society hold different attitudes with varying orientations, salience, and specificity. Thus, tightening gun controls is controversial because large portions of the public are specifically or generally for or against the idea and feel more or less strongly about it. The same could be said about changes in policy concerning abortion, pornography, euthanasia, and amnesty for deserters.

By "social significance" we mean that a change will effect many people. Thus, renewal of the selective service lettery system would, if accomplished, have substantial implications for many people's behavior

and life-styles. The same could be said about desegregation of private clubs, lowering the national speed limit, and instituting socialized medicine.

The four characteristics discussed above are, in the present theory, viewed as beliefs that subjects hold about the importance of a given topic. A category of people under study can believe that a given issue is more or less relevant to their group, community or society. They can also perceive that a given topic is more or less durable, controversial, and socially significant. Therefore, at the conceptual level, at least, the four continua are independent.

A composite index of topic importance can be formed. This will be the weighted averages of the degrees of belief on each of the four continua implied by the topic characteristics. It is clearly recognized that the weights for the separate continua cannot be specified on an *a priori* basis. Initially, therefore, unitary weights are suggested. Clearly, attempts will have to be made to determine other values when specific data are in hand. The weighted index of topic importance can then be entered into the theory as a construct potentially related to behavior.

THE STRUCTURE OF SOCIAL FACILITATION

By social facilitation we mean various conditions that arise from the expectations of self in relation to others and impinge upon the actor in the form of anticipated consequences of contemplated behavior. The types of social facilitators that operate in any given situation of contemplated action are a product of several factors. These include

the nature of the topic, the kinds of people who can observe the action, and their relationship to the actor. These factors give rise to judgments and assessments on the part of the actor concerning the expectations for conformity that others may hold, the sanctions that may arise from deviation from those expectations, and positive or negative self-evaluations that may result.

CATEGORIES AND INDICES OF SOCIAL FACILITATORS

There are three major categories of social facilitators. Each has subdimensions. That is, facilitators can arise from:

(1) The structure of the social situation of action such as

a) norms,

b) roles.

(2) Anticipated sanctioning responses from others such as

a) peers,

b) family,

c) significant others.

(3) Self-imposed standards or self-sanctioning anticipations.

The index of perceived social pressure. From the above considerations, two separate indices of social facilitation can be formed. The first index will refer to social pressure to act or to avoid action. For example, there is considerable pressure for people to vote in this society--regardless of direction. That is, the act of voting itself is given social approval. For other kinds of acts (donating money, getting a chest x-ray, volunteering time, etc.) similar positive pressure exists. For some acts, of course, negative pressures exist

(littering, barring the handicapped from employment, etc.). The index of perceived social pressure will be based on questionnaire assessments of the actors' beliefs concerning possible sanctions for acting or avoiding action. These beliefs are based on all three sources of "facilitators" mentioned at the beginning of the present section.

The index of perceived social influence. Quite independently, a second index can take direction of action into account. That is, for individuals who choose to act there may be social influence to act in a positive or negative way. The index of perceived social influence can be based upon questionnaire assessments of actors' beliefs about possible sanctions and consequences of acting in a favorable vs. unfavorable manner toward the topic in question. This index should also be based on the three sources of "facilitators" listed above.

It is important to make the distinction between these two indices of social facilitation. For example, in any situation where actors are confronted with an opportunity to engage in overt behavior, some will choose not to behave at all. This distinction, we may note, has been a nagging problem to attitude/behavior investigators. Prior theories have failed to take it into account. Thus, it was critical to include in the present theory factors that can account for the non-actor vs. the actor. For those who do choose to act, however, the question remains as to why they choose to act positively or negatively. Generally, then, in an attempt to predict such response patterns, the present theory includes the index of perceived social pressure (to act or avoid action) and the index of perceived social influence (to act positively or negatively).

Questionnaire assessments leading to the computation of both indices can follow a parallel procedure. This should include the measurement of

actors' beliefs concerning all three of the above categories of facilitators. The first category can be measured by items concerning perceived norms and roles. The second category can be measured by assessing actors' beliefs concerning anticipated sanctions for a given behavioral decision from peers, family and others significant to the person. Finally, a set of items dealing with beliefs about self in relation to others, as this will influence the anticipated behavior, can provide a measure of facilitation category three.

For each of the two indices these sets of assessments will form six subcontinua that can first be combined to identify three somewhat distinct dimensions of social facilitators--perceived situational expectations, perceived potential sanctions, and perceived self orientations. These three dimensions can then be combined, in turn, to form the index of perceived social pressure on the one hand and the index of perceived social influence on the other. It is clearly recognized that a problem exists concerning weighting each of the sub-dimensions so as to achieve maximum predictability. This will have to be empirically explicated.

THE STRUCTURE OF ACTION CONSTRAINTS

Action constraints include all non-social aspects of the anticipated behavior that can modify the consistency between action and attitude. The types of action constraints that operate in any given situation may be a product of the nature of the topic. They may also be related to the opportunities for action available to the set of actors, their perceived competencies to perform, and the difficulty of the required action. In other words, action constraints include the actors' beliefs about the following:

(1) inconvenience of the act, such as traveling long distances to perform the action;

(2) potential financial loss, such as risks or unwanted trade-offs;

(3) difficulty of the act, such as the physical effort required to perform the action;

(4) opportunity, which must present itself readily, otherwise action is unlikely;

(5) competence on the part of the actor to perform the action toward the issue.

Each of these factors provides a continuum of belief that can be assessed by questionnaire items. For such assessments, an index can be computed that will provide a measure of perceived impediments to action. Thus, the index of perceived action constraints should be based on an assessment of the actors' beliefs concerning all five sub-continua above. These can be weighted and combined into a simple average to yield a single measure.

THE STRUCTURE OF OVERT BEHAVIOR

Overt behavior is one of the most significant components of the present theory. Prior theory and research have failed to focus upon a clearly defined domain of socially relevant and topic-related actions. Studies have been concerned on the one hand with such superfluous activities as signing petitions and photographic releases and on the other hand with very broad classes of behavior such as occur in religion, politics, and race relations. In order to focus on a clearly defined domain of behavior, this theory will be concerned with actions that are not under public scrutiny, but which are:

(1) overt rather than covert;

(2) empirical rather than unobservable;

(3) completed rather than intended;

(4) purposive rather than accidental;

(5) understood by the actor rather than unwitting;

(6) consequential rather than trivial.

Thus, our theory focuses on well-defined actions (overt and empirical), that are consciously and deliberately carried out by the actor (completed, purposive, and understood), and which have important social implications for the participants (consequential). Excluded from consideration will be actions that are essentially:

(1) promissory activities, such as statements of behavioral intention;

(2) symbolic commitments, such as petition signing or signing of photographic release statements;

(3) ex-post-facto claims, such as questionnaire or interview accounts of past activities.

The above criteria force a concern with the prediction (on a collective basis) of behavior that can be assessed clearly in a quantitative way. This may be binary in the sense of the proportion of the collectivity that commit an all-or-none act. Or, it may be ordered on a continuum for actions that lend themselves to be ordinal, interval, or ratio types of quantification.

Our specification of what constitutes overt action has important implications for the theory. Research has shown that acts performed in private, not under the observation of others (without their knowledge), are more predictable than those under scrutiny (Warner and De Fleur, 1969). Thus, such acts as voting, especially by secret ballot, may involve a minimum of social facilitators. In addition, such acts are

observable (empirical) in a sense of somewhat different than those more directly open to potential sanctions. Yet, voting and other similar indirectly observable acts are important forms of overt behavior. Such activities can be included in a collective theory, if some numerical assessment is possible of what proportion of the collectivity act in a positive or negative way, or if an average can be obtained for acts that can be graded on a continuum.

AN AXIOMATIC FORMULATION OF THE THEORY

In order to clarify the conceptual structure of the present theory, it can first be stated heuristically in axiomatic form. An important feature of an "axiomatic" theory is that it begins with a set of terms that require only minimal definition. Some writers have insisted that such theories can proceed from "primitive" terms that require no definition (Zetterberg, 1954). In the present formulation, each of the basic terms is given a relatively simple definition drawn from the explications set forth in previous sections.

Once the basic terms have been defined, they are stated in propositions that have either been shown by previous research to have empirical validity or appear to have face validity. That is, postulates are advanced that are either intuitively obvious (an older way of viewing "axioms") or are well supported by prior studies to such a degree that they require no additional direct verification for the purposes to which they are being used. In the present theory the postulates can be viewed as "assumptions," but ones that are more than mere guess-work. In general, they have their bases in prior research.

Once the postulates of the theory have been set forth, a number of additional generalizations will follow logically. Such theorems are derived from the postulates by a reasoning process based on a defined calculus--that is, a set of rules for reasoning and derivation (Braithwaite, 1953). Obviously, verification of the theory will require that the theorems be studied empirically. The present paper is not concerned with such verification but with setting forth the theory systematically. First, therefore, the basic terms of the theory are defined. Next, elementary generalizations are stated that relate the independent and dependent variables in the form of postulates. Then, two major theorems are derived.

The calculus employed for the derivation of the theorems is one of great simplicity: it is assumed that a relationship between variable A (an independent variable) and variable X (a dependent variable) exists in such a way that an increase in A will result in some increase in X, but that the reverse will not be the case. This will be symbolized by the statement that A $\underline{r}$ X, which will mean that it is assumed that A accounts for some substantial portion of the variance of X. Similarly, the statement that B $\underline{r}$ X means that B accounts for some substantial portion of the variance of X. If these two statements are true, it follows that if both A and B are taken together they will additively account for an even larger portion of the variance of X. In other words, (A + B) $\underline{r}$ X. These independent-dependent variable relationships are intended to be non-reciprocal (sometimes called asymmetrical, recursive, or unidirectional) relationships. They imply "causal" sequences in the same sense as that implied in contemporary discussions

of "causal" models (Blalock, 1964). In fact, for the eventual verification, causal modeling will need to be employed to test data against the theorems derived from postulates.

Clearly, the present statement of the theory is based on simple linear and additive assumptions. The ultimate goal is to arrive at that set of theoretical assumptions that will best fit the facts as repeatedly revealed in research data. Alternative formulations could be developed with more complex non-linear and interactive assumptions. As a beginning point, however, formalization of the theory has been accomplished at a relatively simple level. This provides both heuristic and statistical advantages. A more precise formulation at this stage could have unwanted results. As Leon Festinger (1950) put it:

> It is probably correct that if a theory becomes too precise too early it can become sterile. It is also probably correct that if a theory stays too vague and ambiguous for too long it can be harmful in that nothing can be done to disprove or change it. (271).

Therefore, we will formulate the theory for present purposes in additive, linear, independent, and recursive terms. Then, after the relationship between theory and relevant data has been more fully developed, models can be designed that make alternative assumptions about relationships between the variables of the theory. Thus, potential non-recursive relationships between attitudes and behavior plus relationships between independent factors will be studied after the structural theory (as stated) has been tested.

Definition of basic terms

Att = the mean attitude score for a sample under study, i.e., the normalized average of the respondents' scores on orientation, salience, and specificity.

Isp = The mean index of social pressure (to act or avoid action) for the sample under study.

Isi = The mean index of perceived social influence (to act positively or negatively) for the sample under study.

Iac = The mean index of perceived action constraints (making action more or less difficult) for the sample under study.

Top = The mean index of topic importance (making the issue more or less important) for the sample under study.

Prp = The proportion of the sample that will initiate or avoid action toward the topic (based on the average probability of individual action vs. non-action).

Act = The behavioral direction index (the proportion of the sample who take positive or negative action toward the attitude topic).

Postulates of action vs. non-action

Where ceteris parabus prevails:

(1) Att r Prp The more positive (or negative) the mean attitude score of the sample, the greater the proportion that will initiate a topic-related action.

(2) Isp $\underline{r}$ Prp The higher the mean index of perceived social pressure to act (or avoid action) of the members of the sample, the greater the proportion that will initiate a topic-related action (or decline to act).

(3) $\frac{1}{\text{Iac}}$ $\underline{r}$ Prp The lower the mean index of perceived action constraints (less deterring) for the sample, the greater the proportion that will initiate a topic-related action.

(4) Top $\underline{r}$ Prp The higher the index of topic beliefs (more important) for the sample the greater the proportion that will initiate a topic-related action.

From the postulates above and following the calculus described earlier, a number of theorems can be derived. In all, seventeen can be derived with two or three independent variables. These need not all be listed. However, the following are illustrations:

From (1) and (2) above,

(5) (Att + Isp) $\underline{r}$ Prp That is, the stronger the attitude and the higher the social pressure to act, the larger the proportion that will initiate a topic-related action.

From (1) and (3) above,

(6) (Isp + $\frac{1}{\text{Iac}}$) $\underline{r}$ Prp That is, the higher the social pressure to act and lower the action constraints, the larger the proportion that will initiate a topic-related action.

Also from postulates (1), (2), (3), and (4) above in accordance with (5) and (6) above, the following theorem with all four factors can be derived:

(7) $(Att + Isp + \frac{1}{Iac} + Top) \underline{r} Prp$

That is, the stronger the attitude, the higher the social pressure to act, the lower the action constraints, and the more important the topic (on the average for the sample) the larger the proportion that will initiate a topic-related action.

Expression (7) above can be called the Action Probability Theorem. It brings together into a single additive expression those components of the larger theory that play a part in determining whether members of the sample will take or avoid the type of action toward the topic that is under study. Thus, it predicts the proportion of the sample who will act or not act toward the topic.

Postulates of the direction of action

For those who initiate a topic-related action, and where ceteris parabus prevails:

(8) Att $\underline{r}$ Act

The more positive (or negative) the mean attitude score, the greater (positive or negative) the behavioral direction index. That is, attitudes and actions will tend to be parallel.

(9) Isi $\underline{r}$ Act

The more positive (or negative) the mean index of social influence, the greater (positive or negative) the behavioral

direction index. That is, action will tend to be in the direction of social influence.

Thus, from (8) and (9) above:

(10) (Att + Isi) $\underline{r}$ Act — The more positive (or negative) the mean attitude score, and the more positive (or negative) the index of social influence, the greater (positive or negative) the behavioral direction index for those who initiate action. That is, action will tend to be in the direction of attitude and social influence.

Expression (10) can be called the Action Direction Theorem. It brings together those components that give positive or negative direction to the topic-related actions of members of a collectivity. Thus, it predicts the degree to which members of a sample will act in accordance with a combination of attitudes and social influences.

In general, then, the development of the Structural Theory of the relationship between attitudes and behavior begins with a clear explication of the components of the theory. It sets forth a required set of constructs and suggests procedures for their measurement. In the formalization of the theory those constructs are defined and identified as basic terms. Postulates are then formulated from which theorems are derived. At this point, there is no a priori basis for advancing a specific order of importance of the terms in the postulates. This is an empirical question to be resolved.

The theorems provide propositions that can eventually be developed into alternative models for testing. If the two major theorems are supported by data (from suitably designed research) the postulates will be given indirect empirical support. Thus, the Structural Theory consists of the nine postulates and the derived theorems that concern (1) action vs. non-action, and (2) the direction of action if taken. It should be noted that there are problems associated with deriving theorems from propositions stated in correlational terms. These problems are well understood and have been considered in the formulation of the theory.[1]

As can be seen from the detailed explication above, the Structural Theory is very comprehensive. It is not restricted to problems of persuasion research. However, one of the major purposes of the present paper is to show how the theory can provide guides for research on strategies of achieving change through communication.

IMPLICATIONS FOR PERSUASION RESEARCH

What are the implications of the theory for persuasion research? In order to answer this question we need to constrast the typical approaches of the past with a fresh approach that can be derived from the theory.

Most persuasion research in the past has relied largely on ideas from psychology or related fields. Such formulations were never intended as guides to understanding the process of persuasion. The broad perspectives on which more specific formulations were based included Gestalt Theory, Field Theory, Psychoanalytic Theory, Learning

Theory, and so on. From such sources came middle-range theories such as balance, dissonance, social comparison, attribution, congruity, functional perspectives on attitudes, social judgment, reactance, and many others. These were attempts to describe and understand particular human cognitive processes. Only after they received research attention in contexts other than communication research were they adapted and tried as guides to persuasion strategies.

Obviously, such an adaptation of theoretical frameworks can be expected to result mainly in "shotgun empiricism." That is, such an approach lacks an adequate logical basis. Borrowing a concept here, a hypothesis there, and an assumption elsewhere scarcely represents rigorous theory construction. Thus, the bulk of persuasion research to date has explored a miscellaneous collection of message-related variables. For example, studies have focused on attitude change as a result of such factors as: primacy-recency effects, message organization, the "evidence" contained in a message, fear arousal, the credibility of the message source, and so on. It is for these reasons that the results of persuasion research have contributed nothing to the construction of theory explaining the relationship between attitudes and behavior. Furthermore, such findings have provided little to our understanding of the process of social change. In fact, many former persuasion scholars now feel that attitude change is no more than an experimental artifact. Others believe that attitude changes are real enough but that they have a minimum influence on behavior. The consequence of such thinking has been a substantial decrease over the last two decades in the number of published studies of attitude change.

It is the contention of the present authors, however, that change is a vital aspect of the attitude/behavior relationship. It follows logically from the Structural Theory that major strategies for achieving change must be based on modifications of belief configurations in such a way as to increase or decrease the proportion of people who will take topic-related actions and to influence the direction of such actions. Thus, in extending the present theory to the area of persuasion, messages would be used not only to modify attitude beliefs but to change beliefs about topics and to influence beliefs about facilitators and constraints. In other words, persuasive messages should be structured as to penetrate and subsequently influence the positions of individuals on each of the belief orientation continua associated with the constructs of the theory. Presumably, the consequence of such message-induced changes would be to alter the actions of the individuals involved.

In more detail, the pivotal points of message penetration would fall within the belief structures shown in Table I. Specifically, messages constructed to alter attitudes would focus upon what we have termed orientation, salience, and specificity. Persuasive attempts to modify belief orientations about the structural characteristics of topics should be directed toward topic relevance, durability, controversiality, and social significance. Message strategies directed toward belief orientations about constraints must be concerned with perceived social influences (in the form of norms, roles, and sanctions) to act positively or negatively toward the topic. Persuasive messages must also be concerned with the sub-dimensions of action constraints such as inconvenience, financial loss, difficulty of the act, action opportunity

Table 1

POTENTIAL TARGETS FOR BELIEF MODIFICATION

ATTITUDINAL STRUCTURE

- Orientation
- Salience
- Specificity

TOPIC IMPORTANCE

- Relevance
- Durability
- Controversiality
- Social significance

SOCIAL FACILITATION

- Norms
- Roles
- Sanctions

ACTION CONSTRAINTS

- Inconvenience
- Financial loss
- Difficulty
- Opportunity
- Competence

and perceived (self) competence. Overall changes resulting from the combined effects on the above belief structures would provide for greater control over the probability and direction of action of target populations.

The details of designing message content and structure that will fulfill these objectives will, of course, vary greatly from topic to topic and from one type of target population to another. Appropriate techniques can only be discovered through research. The authors realize that implementing the persuasion strategies mandated by the Structural Theory may be difficult. We can only say that the process of persuading human beings to change their patterns of behavior and belief has never been seen as a simple matter. Moreover, the results of decades of prior research based on an assortment of alternative formulations have not been impressive. In final perspective, therefore, the major significance of the Structural Theory in terms of persuasion is that it provides a comprehensive framework for programs of further research on the process of achieving social change through communication.

NOTE

[1]An abundant literature exists on problems that can arise in attempting to deduce theorems from postulates stated in correlational form. Several years ago, a number of attempts were made to formulate such theories without taking these problems into account and a substantial controversy resulted (Catton, 1961; Gibbs and Martin, 1962; Gould and Shrag, 1962; Schwirian and Prehn, 1962; Duncan, 1963; Prehn and Schwirian, 1963). However, many of these problems were clarified in a seminal article by Costner and Leik (1964), who showed that derivations could be made providing certain specific rules were followed and particular precautions were taken. In general, the controversy centered around the difficulty of reaching a conclusion concerning the probable correlation between variables A and C, when it is postulated that A is to some extent correlated with B and that B in turn is to some extent correlated with C. In other words, the pitfall lies in making assumptions about both the sign and the degree of correlation between A and C.

This problem is not of concern in the Structural Theory outlined in this paper. While the formulation does make use of (recursive) correlational propositions, the inferences used to derive the theorems are of a different nature. It is assumed that each of the independent factors of the theory is predictive (in some degree) of the dependent variable in each of the theorems. That is, if A and X are correlated, and if B and X are correlated, the inference is simply that both A and B separately and jointly account for variance in X. In other words, there is no assumption that A and X are correlated because of an intervening factor.

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